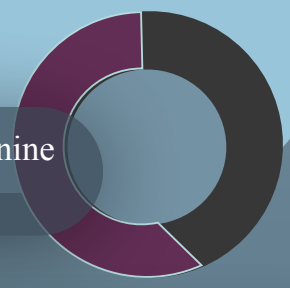
A review of prognostic factors used in canine Diffuse Large B-cell lymphoma

Canine DLBCL

Canine Diffuse large B-cell lymphoma (cDLBCL) is considered a high-grade B-cell lymphoma subtype characterized by having markedly different clinical courses and treatment responses. This proliferation is mainly arising in lymph nodes (LNs), leading to peripheral generalized lymphadenopathy in turn considered the distinctive feature and typical presentation of the most common form so-called multicentric.



Represents **36-58%** of Canine Malignant Lymphomas

Objectives

As a neoplasia frequently encountered in practice, cDLBCL commonalities and traits have been meticulously studied to correlate this histiotype classification with a standard biological behavior in order to achieve a reliable prognosis.

This review aims to assess and summarize the clinical impact of several concrete characteristics that can apply to cDLBCL by examining existing data on clinical and molecular cDLBCL evaluation parameters, genomic research earmarks and treatment specifics.

Thus, the present multidisciplinary dissertation addresses aspects of clinical relevance to define more precisely cDLBCL:

- pattern of presentation and dissemination
- its individualized prognostic features
- identification of new therapeutic targets.

Summary of prognostic factors linked to cDLBCL disscussed in the present dissertation

Staging

- WHO Stage V
- Bone marrow and peripheral blood involvement 3%
- WHO Substage b
- Hepatic infiltration

Immunophenotype

- ▼MHC II expression
- Minimal Residual Disease detection
- % Ki67 determination
- ▲Small non-neoplastic T-lymphocytes

Genetics

- B-cell pathway differentiation mutations
- Death-pathway alterations
- Chromosomal aberrations
- Epigenetic changes

Blood Analyses

- Anaemia
- Thrombocytopenia
- ▼Lymphocyte/Monocyte ≤ 1,2
- ▲[Serum globulin]

Therapy

- Single agent
- ▼Weeks of duration
- ▲Active immunotherapy

Conclusion

The heterogeneous clinical course and response of cDLBCL may be partly explained by the **genetic** and **epigenetic** changes occurring during the malignant cell proliferation, along with **tumor microenvironment** and **pharmacogenetic interaction** varying among individuals. Further significant data unification and corroboration is expected in the future to create a solid network between the biologic, behavioral, genetic and molecular characteristics of cDLBCL and its clinical translation.

Mar Ivars Ribes

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Universitat Autònoma de Barcelona